

APPENDIX B

FINAL DESIGN DOCUMENT

This appendix presents detailed information regarding the final design and specifications for the storm water retention basin to be constructed at ELA3.

Final Design Drawing

Figures B-1A and B-1B (Drawings GW606285 and GW606286, respectively) present the final design for the retention basin and detailed information with respect to the design including:

- Construction of storm water inlet pipes through the liner and how the liner will be secured at the storm water pipe interface.
- Storm water inlet pipes which may include end sections to prevent erosion/scouring.
- Methods/materials to prevent impacts to the base of the retention pond from storm water discharge.

In regard to the end sections on the storm water pipes as presented in the second bullet, a second layer of geomembrane will be placed on the slope that is under the pipes discharge, as shown on Figure B-1B (Drawing GW606286), to prevent erosion/scouring of the basin.

Surface Water Run-off and Construction

The CASP is designed so all surface water within the CASP area is direct toward inlets that transport the surface water through a series of pipes that drain into the retention basin. Because of the elevation of the area and sloping of the CASP perimeter surface, run-off is directed away from the CASP area so that surface water that lands out-side of the CASP area will not enter the storm water inlets and flow to the retention basin. Additionally, berms will be constructed around the retention basin itself to ensure no localized run-off of stormwater will enter the system.

Construction of the basin will be performed using conventional earth moving equipment such as excavators and bull dozers. This equipment will remove the existing sediment material and load the materials into trucks for transporting to a disposal area such as the CAMU. Decontamination of the equipment that comes in contact with the existing materials will be done on a suitably constructed decontamination pad using shovels, brushes etc. if a dry decontamination can be performed or a high pressure wash if a wet decontamination is required. All waste materials generated during the decontamination process will be contained and disposed of at the CAMU along with the waste materials.

Personnel used throughout the construction process will include construction management and supervisory professionals for directing the construction contractors (prequalified to ensure they have sufficient experience in conducting this type of work) and monitoring their activities. The excavation and disposal of the sediment will be managed by experienced USS environmental professionals or our designated RCRA engineering consultants. Management and supervisory personnel will provide construction monitoring services that ensure construction was performed in accordance with the contract documents, and this addendum.

The cost to construct the basin as provided in the attached drawings is estimated at \$ 330,000 (Table B-1).

Specifications of the Construction Materials

- The retention basin final design plan view is presented on Figure B-1A (Drawing GW606285).
- The construction material specifications are presented on Figure B-1B (Drawing GW606286).
- Geomembrane permeability and UV resistant are presented on Figure B-1 (Drawing GW606286) and in the following attachments:
 - ✓ Attachment B-1 -- Geomembrane Permeability Testing
 - ✓ Attachment B-2 -- Geomembrane UV Resistance Testing
- Material specifications for the geotextile are presented in:
 - ✓ Attachment B-3 -- Non-Woven Geotextile Product Specification

Deployment and Construction Methods for the Liner, Sub-base, the Piping, Riprap and Other Components of the Retention Pond

- The deployment and construction methods for the liner, sub-base, and piping are presented on Figure B-1B (Drawings GW606286), Figure B-2 (GW606278), and in the following attachments:
 - ✓ Attachment B-4 -- Geomembrane Subgrade Preparation
 - ✓ Attachment B-5 -- Geomembrane Installation Quality Assurance Manual
 - ✓ Attachment B-6 -- Geotextile Installation Quality Assurance Manual
 - ✓ Attachment B-7 -- ASTM C444-03. *Standard Specifications for Perforated Concrete Pipe*

Suitability of Slag and other Fill Materials Proposed for Use

The slag for the retention pond sub-base is being used for structural fill and railroad sub-ballast throughout the work area. The base material has been specified in the construction documents with the approval by geomembrane installer being required. The side slopes are a 2H:1V slope.

Compaction to 90% of the maximum dry density as determined from ASTM D 1557 has been clarified on the side slopes (Figure B-1B GW606286).

Based on the analytical data of the slag materials used for filling at the CASP area, as presented in Attachment A to the ISM Monthly Progress Report No. 2 (submitted to USEPA on October 15, 2010), chemicals in the slag fill materials consist primarily of inorganics. As indicated in information presented in the following attachment, the geomembrane that will be used at the retention basin is compatible with inorganics.

- ✓ Attachment B-8 -- Geomembrane Chemical Resistance